TOOL MODULE
OPERATION SHEET

SERVICE MANUAL UTILIZATION

OPERATION NO. T-13

BACKGROUND:

Proper use of the appropriate shop manual will allow the technician to plan ahead, avoid unnecessary steps, and to anticipate safely hazards. Today's technology requires the technician to become familiar with using and understanding the many different types of service manuals available. They include: manufacturers' manuals, specialized manuals, and general repair manuals (independent manuals). Some manufacturers' manuals may also be available on DVD's, CD's, and on the internet.

MATERIALS: Shop Manuals

TOOLS & EQUIPMENT: N/A

SPECIAL TOOLS & EQUIPMENT: N/A

PROCEDURES:

Complete the following questions and Specification Data Form using the appropriate shop manuals where necessary.

1. Explain the following types of service manuals.
   a. Manufacturer's manuals____________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   b. Specialized manuals.____________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   c. General repair manuals._______________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. List the different types of diagrams that are found in service manuals.______
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
3. Identify the following abbreviations:
   A. P/S ____________________
   B. AT ____________________
   C. TDC ____________________
   D. EGR ____________________
   E. DIS ____________________
   F. PCV ____________________
   G. OHC ____________________
   H. ATDC ____________________

4. What information can be found on the VIN information sticker?
   
   

5. Where is it generally found? And what does VIN (ID) mean?
   
   

6. With the use of a service manual, locate the page numbers that describe maintenance of the following parts.

<table>
<thead>
<tr>
<th>Part</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Engine replace</td>
<td></td>
</tr>
<tr>
<td>B. Valve lifters</td>
<td></td>
</tr>
<tr>
<td>C. Shocks or Struts</td>
<td></td>
</tr>
<tr>
<td>D. Timing chain, gears, or belt</td>
<td></td>
</tr>
<tr>
<td>E. Camshaft</td>
<td></td>
</tr>
<tr>
<td>F. Brakes</td>
<td></td>
</tr>
<tr>
<td>G. Charging system</td>
<td></td>
</tr>
<tr>
<td>H. Ignition system</td>
<td></td>
</tr>
<tr>
<td>I. Fuel system</td>
<td></td>
</tr>
<tr>
<td>J. Air conditioning system</td>
<td></td>
</tr>
</tbody>
</table>

7. What service manual did you use for Question 5?
   
   

8. Explain how a footnote is used in some service manuals.
   
   

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SPECIFICATION DATA FORM #1

INSTRUCTIONS: Complete the following engine data list by referring to the various automotive shop manuals. Fill in all of the blanks that apply to the specific engine under hood sticker.

CAR MAKE_________________YEAR______MODEL____________________
ENGINE SIZE _____ TRANSMISSION TYPE _______VIN (ID) #__________
FUEL SYSTEM (CARB, TBI, PFI, etc.)_______________________________
VALVE TRAIN TYPE (OHC,CIB, etc.)______________________________
IGN TYPE (DIST – DIS – COP)____________________________________
DISTRIBUTOR ROTATION *________________________________________
FIRING ORDER _________________________________________________
LOCATION OF NUMBER 1 CYL.____________________________________
COIL PRIMARY RESISTANCE _______________________________________
COIL SECONDARY RESISTANCE ___________________________________
INITIAL TIMING (BASE TIMING)___________________________________
IGNITION CABLE RESISTANCE____________________________________
SPARK PLUG TYPE _____________________________________________
SPARK PLUG GAP ______________________________________________
FUEL SYSTEM PRESSURE _________________________________________
IDLE SPEED ____________________________________________________
BATTERY CAPACITY _____________________________________________
STARTER DRAW _________________________________________________
ALTERNATOR CURRENT OUTPUT____________________________________
VOLTAGE REGULATOR SETTING_____________________________________ 
CYLINDER COMPRESSION SPEC._____________________________________

*WHERE APPLICABLE